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THREE LATE MEDIEVAL KILNS FROM THE ATHENIAN AGORA

CAMILLA MACKAY

ABSTRACT. This article presents pottery from three late medieval kilns excavated in the Athenian Agora in the 1930s. Wasters from the kilns provide important proof of the local production of lead-glazed wares that come into use in the early Ottoman period and are found in surveys and excavations throughout Attica and Boeotia. Some of this pottery has been identified as maiolica, but portable x-ray fluorescence (pXRF) analysis has not indicated the presence of tin in the glaze. While distinctive in appearance, the pottery from these kilns seems to continue the ceramic tradition of earlier medieval Athens.

The Agora Excavations were intended from the beginning to reveal the public buildings of ancient Athens, and to accomplish that goal, the medieval overlay of the area had to be removed.¹ Yet from the beginning of the excavations, the post-classical remains in the Agora were systematically recorded and the finds carefully preserved in the storerooms. The vast majority of the material is pottery; the area of the Agora in the late medieval period was mostly residential, with a few churches and some small industry. Yet publication of medieval levels has been scanty. Nonetheless, there is a long history: the very first issue of *Hesperia* in 1933 contained an article on the Roman, Byzantine, and Ottoman pottery found during the first seasons of excavation.² But it was some time until more medieval material was published, and for decades, one of the only, and certainly best-known, publications that focused on pottery in Ottoman Greece was Alison Frantz's 1942 article in *Hesperia* "Turkish Pottery from the Agora." In that article, she drew attention to a type of ceramic with white, red, and blue glaze, and to two kilns excavated in the 1930s that conclusively demonstrated that this pottery was manufactured in Athens. In this article, I revisit the preserved assemblages of those two kilns and present an overview of the contents of a third kiln, also excavated in the 1930s in the Agora, which is hitherto unpublished.

In addition to the blue- and red-on-white painted ware that Frantz published, the kilns yielded a glaze-painted plain or sgraffito ware with the predominant colors yellow, green, and brown. Both finewares are assumed by Frantz to date to the sixteenth century. They are the predominant type of locally made glazed wares found in Athens in that period; they have also been found in Boeotia, both in urban excavations and field survey.³

While I present here only a superficial look at these two types of pottery and do not attempt to refine the dating of these wares, analysis of the three Agora kilns demonstrates local Athenian production for both of these types of glazed pottery. Although these two types are visually distinctive from the glazed pottery in use in Attica and Boeotia during the thirteenth and fourteenth centuries both in shape and decoration, they nonetheless form part of a continuous tradition of ceramic production in the medieval Agora.

Kilns (Figure 10.1)

The three kilns, excavated in 1935 and 1936, were located in the area of the Agora just to the west of the Panathenaic Way and the Stoa of Attalos. There was no associated contemporary architecture. The kilns were of standard updraft type, and all were round, originally with domed tops, with stoking chamber, combustion chamber, perforated floor, and firing chamber.⁴ Bowls in all three kilns were separated with small hand-formed clay tripods; the standard method used from the thirteenth century onwards.⁵ Also manufactured in these kilns were glazed one-handled pitchers. A waster of a two-handled water jar or amphora (a shape that does not appear in glazed form) from Kiln 3 indicates that coarsewares were also made in these kilns.

I include the full (if brief) descriptions from the excavation notebooks, slightly edited, and a general indication of the assemblages saved at the time of excavation. Wasters and pieces from various stages of the manufacturing process were saved by the excavators in some quantities. The tins mentioned in the descriptions, which are used to store excavation pottery, are of the large rectangular type used for olive oil, for example. In order to ensure a fair degree of certainty that the pieces were made in these kilns and were not introduced at another time, I only discuss those pieces that were clearly misfired or discarded, with the exception of Bowls 1–4. The bowls were catalogued in the 1930s but never published; they were presumably made in the kilns and were discards, although since they show no signs of misfiring, this cannot be certain. Nevertheless, they are almost complete examples of the type of glaze-painted pottery that was made in these kilns. It would be misleading to provide percentages of the types of sherds preserved because the excavators did not indicate how much pottery was saved. It appears, however, as though most of the substantial pieces of the glazed wares were saved, and that the number of sherds of red- and blue-painted ware was considerably fewer than the number of glaze-painted sgraffito wares. Dozens of firing tripods were saved.

Dating the kilns is tenuous, and unfortunately, no coins were found to help date the contexts.. Frantz was, however, able to establish a *terminus ante quem*—the church of Panagia Vlassarou, which was demolished in 1935, was built directly over the kilns and was standing in 1676, when Jacob Spon visited Athens.⁶ Since Kilns 2 and 3 must predate this church, the sixteenth-century date assigned to the pottery since Frantz's article is likely to be correct.

The tuyère (bellows nozzle) (no. 5) was found in Kiln 3, and is therefore presumably part of the kiln furniture. Tuyères from medieval or post-medieval contexts have so rarely been published that I include it in this catalogue.

Kiln 1 (Figure 10.1a)

Section O 58:ΚΓ. Notebook, page 393. Excavated April 9, 1935:

About a meter below the present surface we have come upon the top of a small potter's oven of the Turkish period. It is no longer roofed over, the top being broken. It is about 1.20 m. in diameter. The walls are built of bits of brick and pot-sherds, bonded with reddish brown clay, which has fired yellowish (brittle) at inner edge. They are preserved to a height of ca. 0.50–0.60.

Below they rest on a layer of stones. To the north is a doorway 0.45 wide. In the doorway and in the front of the chamber was a layer of burning in which were the bowls [P 5440 and P 5441] and Tin 118. Toward the back, and rising sharply over a fill of brown earth lay some of the fallen bricks and plaster of the wall.

Saved from Kiln 1 (Section O, Tins 117 and 118) were bowls and jugs from various stages in the firing process, including glazed and unglazed wasters of glaze-painted sgraffito and plain bowls, and tripod stilts. Two bowls from the burned level in the kiln were catalogued (nos. 1 and 2, below).

Kiln 2 (Figure 10.1b)

Section N 12:AA-ΛΓ. Notebook, page 792. Excavated 22 February, 1936.

This is one of the two kilns below the floor of the church of Panagia Vlassarou.⁷

Its mouth is paved with blackened marble slabs at level -0.98 m. A bottle-neck built up of red soft bricks has a floor at level -1.50 m. The main kiln, 1.20 m. in diameter, corresponded exactly to the well at 12:AA, and its sides of bricks, almost unrecognizable, actually line it at this level. Its eastern edge was cut by the foundations of the church. Not enough remains to determine whether or not it had a ribbed dome. In the neck were found more late Turkish sherds, and some already slipped but without glaze.

Saved from Kiln 2 (Section N, Tin 26) were pieces of a large coarseware basin, some blue, red, and white wares, glaze-painted sgraffito wares, and lamps.

Kiln 3 (Figure 10.1c)

Section N 14-15:AA-AB Notebook p. 662. Excavated 30 January, 1936.

This is the second of the two kilns mentioned by Frantz.⁸

The floor of the kiln was reached at level 58.4 m. It sloped slightly northward and consisted of hard-packed lime and earth. Embedded in this floor were numbers of coarse sherds, many burned quite black—one with green glaze of good Turkish type. The walls were made of small pieces of tiles, broken and reused. In the 'neck' they curved over to form a vault and showed heavy evidence of burning. In the central chamber they rose vertically for 0.70 m, then curved in to form vault segments between. The ribs, composed of three arches of brick intersecting at the centre. These bricks were badly softened and were only preserved in situ for the lowest 3 courses. They measured l. 0.27 w. 0.135, h. 0.035, poorly made. The kiln was lined with a thick brown plaster-cement, rather tough and coarse. It was also used to set the bricks. In the 'neck' were found quantities of sherds, largely coarse, but including some rather better pieces of green glazed and painted Turkish wares.

Saved from Kiln 3 (Section N, Tins 27–30) were coarsewares, including a waster of a water jar, many bowls in various stages of the firing process (plain, slipped but not glazed, and misfired), and tripods. There were also a number of lamps. Like Kiln 2, this kiln contained blue, red, and

white pottery, and also the same types of glaze-painted plain and sgraffito bowls that were made in Kilns 1 and 2. Two bowls were catalogued (nos. 3 and 4, below).

Blue, White, and Red Imitation Maiolica (Figure 10.2)

The blue- and red-painted wares made in Kilns 2 and 3 are tantalizing because they represent a strong visual break from earlier medieval Athenian glazed pottery. This type of pottery was first published by Frederick Waagé in 1933, but Frantz drew particular attention to it because the two kilns that she published proved that it was made in the Agora.⁹ “Blue and white painted ware” appears in her groups 3–5.

Examples of imitation maiolica have been found in Thebes, the Boeotian countryside, and at Corinth.¹⁰ The three illustrations here are illustrative of the types of bowls and pitchers that occur. Pictorial decoration is simple, and can include birds, like the bowl of figure 10.2a, and lions.¹¹ Bowls with similar shapes to the glaze-painted sgraffito also occur (squared rims, high ring bases as in figure 10.2b). Finally, trefoil-mouthed pitchers with geometric or pictorial decoration are common (figure 10.2c). Frantz's article provides good illustrations of the basic shapes.¹²

Late Medieval Glazed-Painted Pottery (Figures. 10.3–10.6)

Glaze-painted pottery was made in all three kilns. It is lead-glazed, sometimes with sgraffito decoration, in different shades of three basic colors, green, yellow, and brown, with the occasional addition of blue. It too represents a distinctive visual change from the pottery of thirteenth- and fourteenth-century Athens, although the colors are similar.¹³ The sgraffito pieces from Kiln 1 (nos. 1, 2; figures. 10.3–10.4) are good examples of the type. Bowls were carefully made and well formed, in contrast to the sloppy appearance of earlier Athenian sgraffito. The rims are distinctive: Bowls 1 and 2 both have square rims with exterior ridges; this particularly common form of rim may occur on bowls of all shapes, including flat plates. The bowls also have high squared ring bases. Slip often covers some or most of the exterior of the vessel. Sgraffito designs—zigzags, squiggles—were hastily but evenly applied within and sometimes on the exterior.¹⁴ Glaze is applied both to the interior (in multiple colors), and to most or all of the exterior. At least one workshop in the area of the Roman Agora was producing bowls with pictorial designs; perhaps there was no such workshop in the area of the Agora Excavations, for almost all the contemporary sgraffito bowls and plates found in the Agora have only linear decoration.¹⁵

This type of pottery is known from other sites in central and southern Greece. Pieces found outside Athens could be Athenian products, but there could well have been other kilns producing the same types of pottery. Examples of this type of fineware have been found in excavations and surveys in Phocis and Boeotia.¹⁶

1. Glaze-Painted Sgraffito Bowl (Figure 10.3)
P 5440. From Kiln 1.

H. 0.115, Diam. 0.255, Diam. (base) 0.095.

Part of rim and wall missing. Deep bowl with squared, outwardly thickened rim with double ridge 1 cm below rim on exterior. High squared ring foot. On interior, sgraffito lines around body just below rim and 4 cm below rim. White slip over entire interior and 2–4 cm down exterior, with dribbles. Interior covered with light green glaze; darker green glaze on top of rim and covering slip on exterior. Applied darker green and brown glaze: in bottom, three circles of dark green with brown cross-hatching and brown chevrons between; around rim, dark green curlicues interspersed with short brown lines. Tripod marks in center bottom. 7.5YR 7/4–7/6 (pink to reddish yellow).

2. Glaze-Painted Sgraffito Bowl (Figure 10.4)

P 5441. From Kiln 1.

H. 0.085, Diam. 0.175, Diam. (base) 0.075.

Similar in shape to P 5440, only smaller. Complete profile; missing pieces from body. Four sgraffito lines around body interior just below rim. Pale slip over interior and top of bowl on exterior, with drips. Pale green glaze on interior, dark green glaze applied to top of rim, and over slip on exterior. Design of unevenly applied squiggles of dark green and brown on interior. Tripod marks in center bottom. 5YR 6/6–7/6 (reddish yellow).

3. Glaze-Painted Bowl (Figure 10.5)

P 6650. From Kiln 3.

H. 0.043, Diam. 0.093, Diam. (foot) 0.042

Entire profile preserved, missing about half of wall. One non-joining piece of rim. Rounded bowl with plain, tapering rim. Well-formed high ring foot. White slip over interior and all of exterior. Pale green glaze on interior, dark green on exterior, lip dipped a second time in green glaze. Design of blue circle in center bottom with blue checkerboard pattern and light brown dots in center. On interior walls, outlined zigzag pattern, lines filled with alternating green and brown. Tripod marks in center bottom. 7.5YR 8/4 (pink).

4. Glazed Bowl (Figure 10.6)

P 6649. From Kiln 3.

H. 0.042, Diam., 0.093, Diam. (foot) 0.042.

Small rounded bowl, almost completely preserved, with chipped foot. Plain tapering rim, high ring base. No slip. Pale yellow glaze applied to interior and exterior, thicker and opaque on interior walls. Tripod marks in center bottom. 7.5YR 7/4 (pink).

5. Tuyère (Figure 10.7)

N1003. Section N, Tin 29

L. 0.385, Diam. (wider end) 0.105; (narrower end) 0.055. Thickness of wall 0.008–0.012.

Tube of clay, flaring at one end. Formed and smoothed by hand; 0.010 on wider end shaved down to smooth surface and along part of the rest of its length. Edge of wider end also cut with a string. Incision around circumference, 0.005 from narrower end; probably an aborted string cut. Yellow glaze covers interior and drips down wider end of exterior. The glaze is surprising, but

because of its size, it is unlikely to have been a funnel.¹⁷ 5YR 6/4–7/4 (light reddish brown to pink); some large white and dark inclusions.

Discussion

In recent years, it has been assumed that the blue and white wares are maiolicas (i.e., earthenwares with tin-opacified glaze) and therefore represent a technological change from lead-glazed pottery.¹⁸ There are certainly unmistakable similarities between this Athenian ware and Italian maiolicas in shape and decoration. Joanita Vroom, in her field guide to Byzantine and later pottery, for instance, calls it “Maiolica from Greece,” and I have also made this assumption.¹⁹ Such an assumption turns out to be unwarranted, however; whatever Italian influence may be seen in the pottery, whether in shape or decoration, does not extend to the adoption of new (and expensive) materials and new techniques of glazing.²⁰

Preliminary scientific investigation of the glaze using a handheld portable x-ray fluorescence (pXRF) analyzer seems to indicate that no tin is present in the lead glaze. True medieval maiolicas had a high enough percentage of tin that one would expect the pXRF analyzer to indicate the presence of tin if the Agora samples had a similar makeup: the glazes of Italian maiolicas, Spanish pottery from Paterna, and Iznik ceramics all contain tin oxide to at least 6% of total weight.²¹ But it did not; all the Agora samples, sgraffitos and the possible maiolicas, were lead-glazed with no trace of tin. The samples tested were only those that were definitely produced in the kilns, i.e., those that were misfired or wasters. All showed elements one would expect in lead-glazed pottery (lead and iron in particular), but there was no tin present, and the readings of the elements present were similar in all samples from all three kilns. The “maiolicas” are in fact lead-glazed without tin oxide, as were all the samples tested from all kilns. Further, more definitive, scientific testing should be carried out before the question of these Athenian glazes is decided.

In fact, in the case of the bowls, there is little difference in shape or decorative technique between those with and without blue glaze; the blue color is an innovation of Athenian potters of the Ottoman period, but we see it used both on yellow- and green-glazed pieces, just as green appears also on the largely blue and white pieces. Bowl 4, with blue glaze applied to a mostly green and yellow decoration, is a case in point. The blue and white pieces lack sgraffito decoration, and pitchers are a more common form among the blue and white pottery than the more traditionally colored green, brown, and yellow pots, but they were all made together in the same kilns at the same time. Pictorial decoration of both glaze-painted sgraffito and blue and white pottery can also be strikingly similar: the rooster on the small painted bowl published by Frantz (figure 4) looks very similar to a rooster decorating a contemporary sgraffito bowl found in the Roman Agora.²² In Italy, maiolica pottery was increasingly pictorial; Greek imitation maiolicas never moved beyond linear decoration and the occasional bird; essentially the same as the decoration on sgraffito pottery, despite the additional possibilities of the medium of painting.

These two styles of glazed wares therefore represent both a continuation and a break from the styles of the past. Athens in the earlier medieval period was inward-looking when it came to

ceramics; imports were quite rare in the Frankish period, when Italian imports became common elsewhere in Greece. Although following the Fourth Crusade, there was Burgundian, Catalan, and Florentine presence in Athens before the Ottoman capture of the city in 1458, the material record, particularly in the Agora, barely indicates this western presence, and the same seems to be true of the Agora during the time these kilns were in production.²³ During the early years of the Agora excavations, the medieval overlay of most of the current area of the Agora was excavated in order to expose the ancient city. The excavations were well, but briefly, documented; what chiefly remains are hundreds of storage tins of pottery excavated during the 1930s, both from Frankish period contexts, and from Ottoman late medieval contexts (i.e., contemporary with material from these kilns). These storage tins yield only rare examples of Italian imports. Islamic imports are only slightly more common.²⁴ The lack of excavated prototypes for the maiolica imitations is intriguing; although the Athenian blue and white ware is not maiolica, surely it is influenced by maiolicas. The Athenian imitations reflect Italian prototypes of the fifteenth century rather than eastern: trefoil jugs with glazed exteriors are not shapes that appear, for instance, in Iznik wares.

However striking the types of pottery I present here are, these three kilns bear out an observation Angeliki Charitonidou has already made in her summary of local pottery production in Byzantine and post-Byzantine Athens—that there is no substantive change in the location or type of kilns in Athens during the course of the medieval period.²⁵ The pottery produced in the Agora kilns varies in style from the pottery of earlier periods, but the difference is color, shape, and decoration.²⁶ Both blue and white and glaze-painted sgraffitos (and plainer wares) were manufactured in the same kilns at the same time, and all seem to be decorated with lead glaze. The vessels are more carefully shaped and more carefully and consistently decorated than earlier pots, and red and blue glaze on a white background is a new color scheme in Athens. The jugs suggest Italian influence; the inclination to label them as maiolica is because they look like maiolica, and were probably intended to look like maiolica, but Charitonidou has accurately described them as “pseudo-maiolica.”²⁷ They do not represent a technological innovation for Athens, but rather are a sign of continuity. Production of and demand for new styles of pottery is perhaps unsurprising in light of the growth in population and the economic prosperity of Athens in the sixteenth century, which Machiel Kiel has demonstrated from Ottoman administrative records.²⁸ These tax records provide evidence for production of olive oil, honey, wine, and textiles; in turn, Athens imported wheat from more agriculturally fertile areas. Athenian potters may have produced these pots both for sale outside Athens and to satisfy the Athenian market.

As Joanita Vroom has observed, there is a long road ahead in the study of the pottery of this period, and especially needed is information on production centers, kilns, and closed excavated contexts.²⁹ This article is a small contribution toward filling that need: there is far more that could be done with the material from these and other kilns in the area of the Agora.

NOTES

1. It is with gratitude for the many ways in which I have learned from John Camp (as his student at College Year in Athens and at the American School of Classical Studies, and as a volunteer in the Agora Excavations) that I present this article. My warmest thanks go to the staff of the Agora Excavations, especially Annie Hooton, whose drawings appear here, Jan Jordan, Sylvie Dumont, and Karen Lovén.

2. Frederick O. Waagé, “The Roman and Byzantine Pottery,” *Hesperia* 2 (1933): 279–328.

3. See, e.g., Joanita Vroom, “Post-Medieval Ceramics as Historical Information,” in *Between Venice and Istanbul: Colonial Landscapes in Early Modern Greece*, ed. Siriol Davies and Jack L. Davis (Princeton, NJ: American School of Classical Studies at Athens, 2007): 71–93; Vroom likewise identifies these two types of fineware as predominant in assemblages in the Greek mainland.

4. See John K. Papadopoulos, *Ceramicus Redivivus: The Early Iron Age Potters’ Field in the Area of the Classical Athenian Agora* (Princeton, NJ: American School of Classical Studies at Athens, 2003), 201–209 on kilns in Greece; also Eleni Hasaki, “Ceramic Kilns in Ancient Greece Technology and Organization of Ceramic Workshops” (Ph.D. dissertation, University of Cincinnati, 2002).

5. For similar tripod stilts, see Demetra Papanikola-Bakirtzi, “Τριπόδισκοι ψησίματος των βυζαντινών και μεταβυζαντινών αγγείων,” in *ΑΜΗΤΟΣ: Τιμητικός τόμος για τον Καθηγητή Μανόλη Ανδρόνικο*, vol. 2 (Thessaloniki: Aristoteleion Panepistēmion Thessalonikes, 1987), 641–652; John K. Papadopoulos, “ΛΑΣΑΝΑ, Tuyères, and Kiln Firing Supports,” *Hesperia* 61 (1992): 208–210, plate 49a. Many of the tripods were saved, but it is not clear from the notebooks whether any were discarded.

6. Alison Frantz, “Turkish Pottery from the Agora,” *Hesperia* 11 (1942): 2. Frantz's citation to Jacob Spon, *Voyage d'Italie, de Dalmatie, de Grèce et du Levant* is incorrect; a reference to the church appears in 3:116 of the 1678 edition (Lyon). Spon gives no description, he merely mentions the church as a landmark for identifying a house with an interesting inscription. Panagia Vlassarou was one of the parish churches of Athens in 1824 (John Travlos, *Πολοδομική εξέλιξις των Αθηνών από των προιστορικών χρόνων μέχρι των αρχών του 19ου αιώνας*, 2nd ed. [Athens: Kapon, 1993], 232). The excavation notebook in the Agora archives (section N, pages 614–637) contains a lengthy description and many photographs of the church. Documents and photographs from the Agora archives, including this notebook, are available online at <http://agora.ascsa.net/research?v=list&q=vlassarou&sort=&t=>. See also Andreas Xyngopoulos, *Ευρετήριον των μεσαιωνικών μνημείων, Α, Αθηνών, Τεύχος Β', Τα βυζαντινά και τουρκικά μνημεία των Αθηνών*, *Ευρετήριον των μνημείων της Ελλάδος* (Athens, 1929), 101 (very brief, with some bibliography).

7. Frantz, “Turkish Pottery from the Agora,” 2.

8. *Ibid.*, 2.

9. Waagé, “Roman and Byzantine Pottery,” 325, figure 19g. Frantz, “Turkish Pottery from the Agora,” 1–2.

10. Joanita Vroom, *After Antiquity: Ceramics and Society in the Aegean from the 7th to 20th Century A.C., A Case Study from Boeotia, Central Greece*, (Leiden: Faculty of Archaeology, Leiden University, 2003), 173, ware 28; Joanita Vroom, “Byzantine Garbage and Ottoman Waste,” in *Thèbes: Fouilles de la Cadmée*, vol. 2.2, *Les tablettes en lineaire B de la “Odos Pelopidou”*, *Le contexte archeologique, La ceramique de la “Odos Pelopidou” et la chronology du lineaire B* (Pisa: Istituti Editoriali e Poligrafici Internazionali, 2006), 187–188 and 216, figures. 27–28; Vroom, “Post-Medieval Ceramics as Historical Information,” 75, figures 4.5–4.6; Pamela Armstrong, “Byzantine Thebes: Excavations on the Kadmeia, 1980,” *BSA* 88 (1993): 319, no. 202, plate 34; unpublished sherds from the Eastern Boeotia Archaeological Survey (personal observation); *Corinth* 11:171–172, figure 153.

11. Frantz, “Turkish Pottery from the Agora,” figure 12, nos. 1, 2; in color: Vroom, “Post-Medieval Ceramics as Historical Information,” 75, figure 4.4; Camilla MacKay, “The Byzantine and Post-Byzantine Pottery,” in *Art of Antiquity: Piet de Jong and the Athenian Agora*, ed. John K. Papadopoulos (Athens: American School of Classical Studies at Athens, 2006), 284, figure 28.

12. Frantz, “Turkish Pottery from the Agora,” 6, figures 3–5.

13. See Waagé, “Roman and Byzantine Pottery,” 316–317, figures 12–13 for illustrations of the glazed wares found in the Agora that precede the pottery under discussion here.

14. *Ibid.*, 319, figure 14 for typical Agora pieces.

15. A bowl with a sgraffito boat on the interior was excavated in a kiln in the area of the Roman Agora: Phoibos D. Stavropoulos, “Ανασκαφαί Ρωμαϊκής Αγοράς,” *ArchDelt* 13, Parartema (1930-1931): 4 and 6, figure 6. Another contemporary sgraffito bowl from the Roman Agora has a particularly well-executed rooster: Anastasios. K. Orlandos, “Ἐκθεσις περί των ανασκαφών Βιβλιοθήκης Ἀδριανού και Ρωμαϊκής Αγοράς,” *Archaiologike Ephemeris* (1964): 37–38, figure 70, no. 10 (identified as Byzantine); Konstantina Kokkou-Vyridi, “Συλλογή αγγείων του Πανεπιστημίου Αθηνών,” *Archaiologike Ephemeris* (1980): 57–58, no. 115. Color illustrations: Demetra Papanikola-Bakirtzi, *Byzantine Glazed Ceramics: The Art of Sgraffito* (Athens: Archaeological Receipts Fund, 1999), 100–101, nos. 115–116 (the boat, and a bowl with a warrior on horseback); also Byzantine and Christian Museum, Athens, *The World of the Byzantine Museum* (Athens: Ministry of Culture, Byzantine & Christian Museum, 2004), 330–332, nos. 324–327. See Angeliki Vavyloupoulou-Charitonidou, “Κεραμικά ευρήματα βυζαντινής και μεταβυζαντινής εποχής από την ανασκαφή ‘Νοτίως της Ακροπόλεως’, 1955-1960,” *ArchDelt* 37, A' (1982) [1990]: 137–138, plates 46a-b, 47a for finds from the south of the Acropolis.

16. From Phocis: see Pamela Armstrong, “Some Byzantine and Later Settlements in Eastern Phokis,” *BSA* 84 (1989): 19–20 and plate 8, nos. 39–43, 45, in particular. From Boeotia: Vroom, *After Antiquity*, 171–172, ware 26. Probably Armstrong, “Byzantine Thebes: Excavations on the

Kadmeia, 1980,” pieces from deposits V and VI (pages 313–325); the fragments and illustrations are too small to be certain. There are also unpublished examples from the Eastern Boeotia Archaeological Project at ancient Eleon/modern modern Arma (personal observation). Also possibly Chania: Margrete Hahn, “Modern Greek, Turkish, and Venetian Periods: The Pottery and the Finds,” in *The Greek-Swedish Excavations at the Agia Aikaterini Square Kastelli, Khania, 1970–1987. Results of the Excavations under the Direction of Yannis Tzedakis and Carl-Gustaf Styrenius*. Vol. 1, *From the Geometric to the Modern Greek Period*, ed. Erik Hallager (Stockholm: Svenska Institutet i Athen, 1997), 180 and plate 78a, color frontispiece; although analysis of 84-P 0099 (illustrated in the frontispiece) indicated fabric consistent with Cretan origins.

17. I am grateful to John Papadopoulos for his confirmation of the identification. On tuyères, Papadopoulos, “ΑΑΣΑΝΑ, Tuyères, and Kiln Firing Supports,” 203–221.

18. Tin-glazed earthenwares were first made around the ninth century CE in Mesopotamia, and the technique spread through the Muslim world to Spain and thence to Italy by the twelfth century; see Alan Caiger-Smith, *Tin-Glaze Pottery in Europe and the Islamic World; the Tradition of 1000 Years in Maiolica, Faience & Delftware* (London: Faber, 1973) on the history of maiolica.

19. Joanita Vroom, *Byzantine to Modern Pottery in the Aegean: 7th to 20th Century; An Introduction and Field Guide* (Utrecht: Parnassus Press, 2005), 148–149. MacKay, “Byzantine and Post-Byzantine Pottery,” 284, no. 137.

20. Tin oxide was probably imported from England to Italy, and was expensive; see M. S. Tite, “The Production Technology of Italian Maiolica: A Reassessment,” *Journal of Archaeological Science* 36 (2009): 2078.

21. M Tite, T. Pradell, and A. Shortland, “Discovery, Production and Use of Tin-Based Opacifiers in Glasses, Enamels and Glazes from the Late Iron Age Onwards: A Reassessment,” *Archaeometry* 50 (2008): 69, table 1. The Agora Excavations used a Niton XL3t handheld x-ray fluorescence (pXRF) analyzer; I am indebted to Karen Lovén for her help and advice. The possible maiolica pieces were tested twice and showed no presence of tin. pXRF analyzers are relatively inexpensive and perform non-destructive analysis; results are obtained quickly. While the reliability of the results of pXRF instruments may not be comparable to laboratory XRF analysis, handheld pXRF instruments can be used to answer many archaeological questions. There has been a profusion of articles in recent years on the usefulness of pXRF instruments for identifying provenance of ceramics and obsidian; see Ellery Frahm, “Validity of ‘Off-the-Shelf’ Handheld Portable XRF for Sourcing Near Eastern Obsidian Chip Debris,” *Journal of Archaeological Science* 40 (2013): 1080–1092 (Frahm used an earlier version of Niton handheld analyzer in the same series as the one in the Agora). The question here was a simple one, of the sort suited to this type of equipment: was tin present?

22. See above, note 15.

23. See Kenneth M. Setton, *The Papacy and the Levant, 1204-1571*, vol. 1, *The Thirteenth and Fourteenth Centuries* (Philadelphia: American Philosophical Society, 1976), chapters 16 and

17; Kenneth M. Setton, *Catalan Domination of Athens, 1311-1388*, rev. ed (London: Variorum, 1975), especially chapter 12 for sources on the pre-Ottoman period. Camilla MacKay, "Protomaiolica in Frankish Athens," in "Notes from the Tins: Research in the Stoa of Attalos, Summer 1999," Mark Lawall, et al. *Hesperia* 70 (2001): 178–179, on the lack of western imported pottery in Athens.

24. Vroom ("Post-Medieval Ceramics as Historical Information," 82, figures 4.12, 4.13) states that Iznik and Kütahya wares from Turkey were found in all the deposits she studied from excavations in central Thebes. While not unknown (see Waagé, "Roman and Byzantine Pottery," 326, figure 20 and Frantz, "Turkish Pottery from the Agora," 16, figure 35), Iznik and Kütahya pottery in Agora deposits are much rarer.

25. Angeliki Charitonidou, "Μορφές μεταβυζαντινής κεραμεικής. Αθηναϊκά εργαστήρια," *Αρχαιολογία* 4 (1982): 60–64.

26. See Tite, "The Production Technology of Italian Maiolica," 2077, on pigments and sources for pigments in Italian maiolica.

27. Charitonidou, "Μορφές Μεταβυζαντινής Κεραμεικής. Αθηναϊκά Εργαστήρια," 62.

28. Machiel Kiel, "Population Growth and Food Production in 16th-Century Athens and Attica," in *Comité international d'études pré-ottomanes et ottomanes, 6th Symposium, Cambridge, 1st–4th July 1984. Proceedings*, ed. Jean-Louis Bacqué-Grammont and E. J. van Donzel (Istanbul: Divit Press, 1987), 115–133; Machiel Kiel, "Central Greece in the Suleymanic Age. Preliminary Notes on Population Growth, Economic Expansion and Its Influence on the Spread of Greek Christian Culture," in *Soliman Le Magnifique et son temps*: *Actes du Colloque de Paris, Galeries nationales Du Grand Palais, 7–10 Mars 1990* = *Süleymân the Magnificent and His Time*: *Acts of the Parisian Conference, Galeries Nationales Du Grand Palais, 7–10 March 1990*, ed. Gilles Veinstein (Paris: Documentation Française, 1992), 399–424.

29. Vroom, "Post-Medieval Ceramics as Historical Information," 89–90.

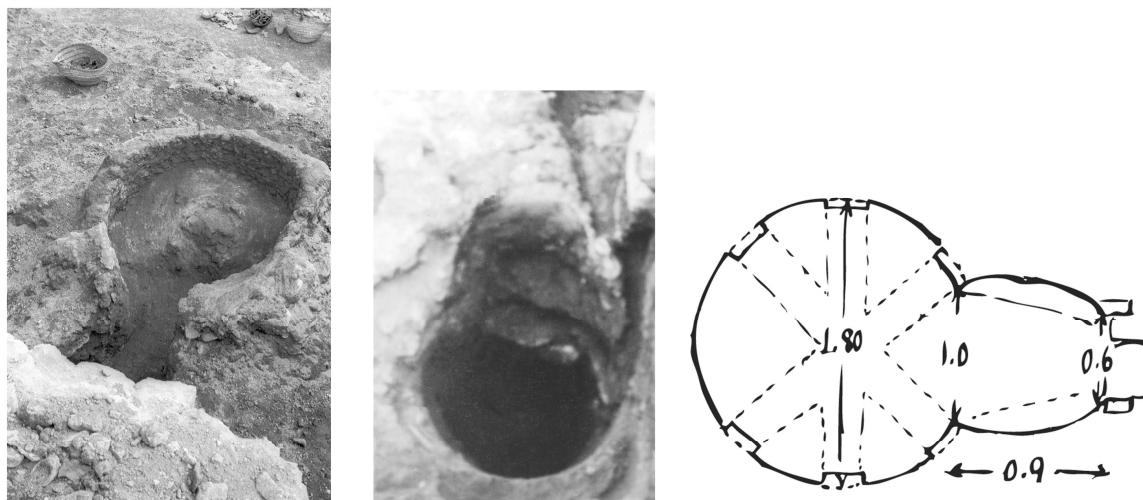


Fig. 10.1. a, Kiln 1, looking southwest (photo from excavation notebook, section O, page 393, April 9, 1935); b, Kiln 2, from above, looking north (photo from excavation notebook, section N, page 792, February 22, 1936); c, Kiln 3 (after drawing from the excavation notebook in the Agora Excavation Archives, section N, page 662). Photos Agora Excavations.



Fig. 10.2. a, blue and white bowl with rooster, P 7815 (Alison Frantz, "Turkish Pottery from the Agora." *Hesperia* 11 [1942]: 5, figure 2); b, blue and white bowl, P 5049 (Frantz, "Turkish Pottery," page 6, figure 3); c, blue and white pitcher, P 7092 (Frantz, "Turkish Pottery," p. 6, fig. 5). Photos Agora Excavations.



Fig. 10.3. Glaze-painted sgraffito bowl (P 5440). Photo Agora Excavations; drawing A. Hooton.

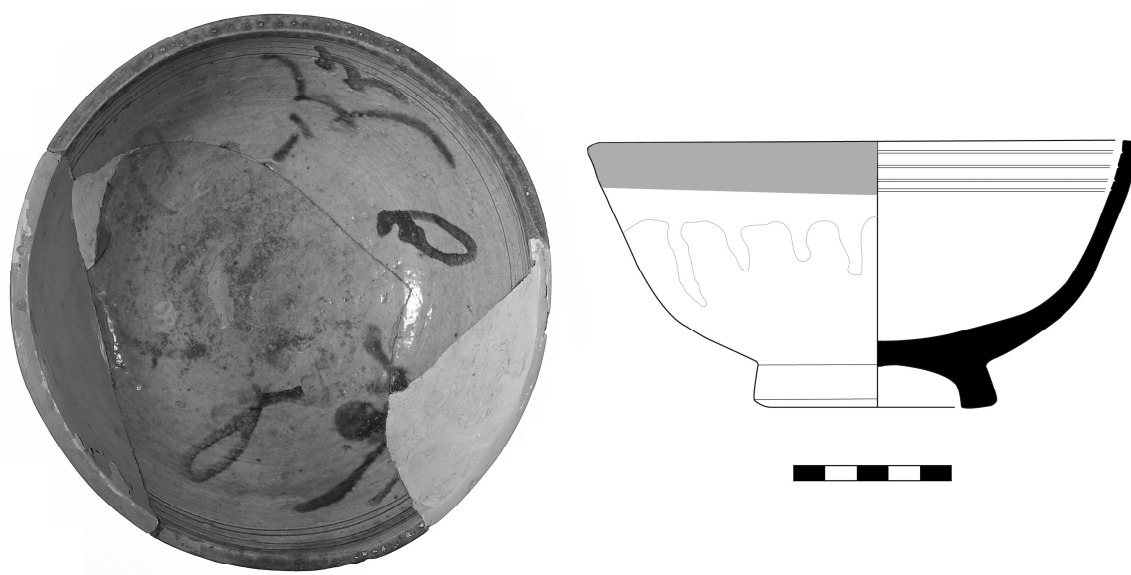


Fig. 10.4. Glaze-painted sgraffito bowl (P 5441). Photo Agora Excavations; drawing A. Hooton.

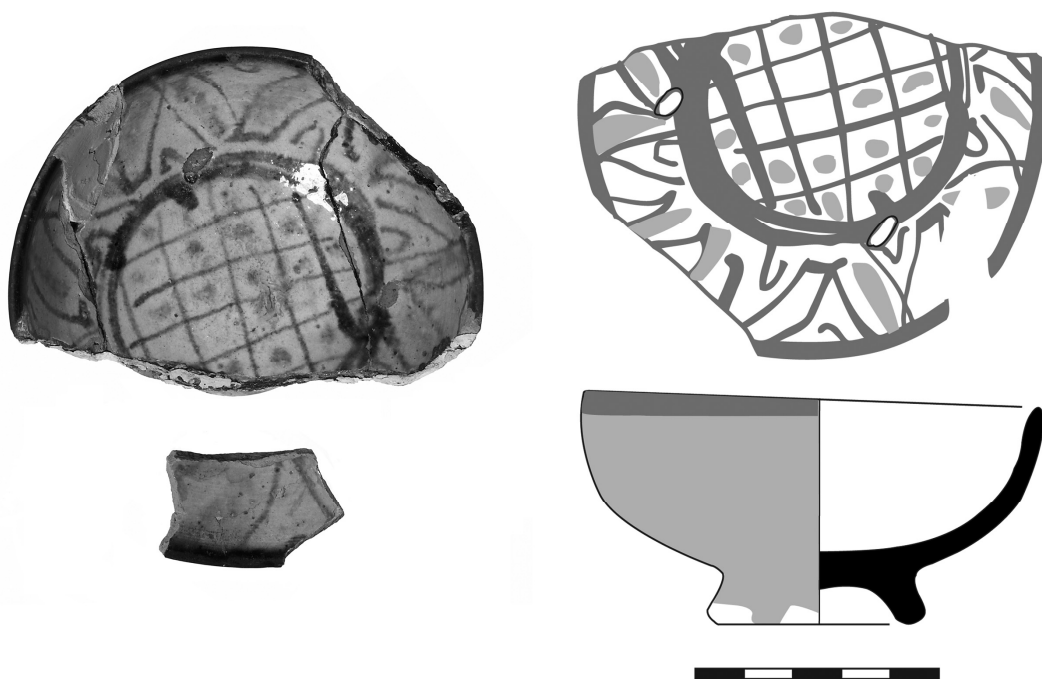


Fig. 10.5. Glaze-painted bowl (P 6650). Photo Agora Excavations; drawing A. Hooton.



Fig. 10.6. Glazed bowl (P 6649). Photo Agora Excavations; drawing A. Hooton.



Fig. 10.7. Tuyère from Kiln 3 (N 1003). Photo Agora Excavations; drawing A. Hooton

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